**Project 2 - Machine Learning**

Members:

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Scope: For this project, our group has decided to develop a Cryptocurrency Advisory Bot, which will use machine learning technology models such as:

* Neural Network
  + We have chosen neural networks as we believe
    - it has higher capacity and output
    - they are versatile
    - it can improve accuracy though multiple training and testing process.
    - detect complex nonlinear relationships between dependent and independent variables, ability to detect all possible interactions between predictor variables, and the availability of multiple training

This advisory bot will indicate the following signals:

* Buy,
* Sell
* Hold

Indicators:

* Finta python library will be used to generate signals along with usage of SMA.
* Simple Moving day Averages (SMA) (Long and Short)
  + SMA is a great option for our indicator as it uses both long and short term moving average, which can be very helpful in understanding a cryptocurrency trajectory, as well entry and exit.
* Fear and greed index (This is through an API. The F&G index can provide a better visualization on human/market emotions. When paired with SMA, we can get much better understanding when to sell, buy or hold. )
* Neural Networks-Deep Learning (for back testing)
* Bollinger Bands
  + It helps determine whether prices are high or low on a relative basis. Bollinger Bands are separated into 2 bands, upper and lower bands with SMA being utilized together.
* Relative Strength Index (RSI)
  + It is useful in to predict the price behavior of a cryptocurrency, validate trends and trend reversals, providing short-term traders with buy, hold and sell signals.

Cryptocurrency selection

* Bitcoin
* Dodge coin
* Lite coin
* XRP

Sources for Data:

* Coin Geko
* Coin Marketcap API
* Fear and Greed Index API+
* Yahoo Finance API